LISTING OF CLAIMS

1. (presently amended) A method of determining a background intensity of an image comprising:

selecting a plurality of spots within the image falling within a least squares curve fit; and

responsive to the selecting, determining a constant background intensity for the spots within the curve fit.

2. (canceled)

3. (presently amended) The method of Claim ~~2~~ 1, further comprising determining the least squares curve fit from the equation:

$$r_m = R(g_m - g_b) + r_b = Rg_m + k$$

where r_m and g_m are the measured values of the images, r_b, and g_b are the background intensities of the images, and k is a constant.

4. (original) The method of Claim 3, further comprising applying a constraint so the background intensities are greater than the bias levels.

5. (presently amended) The method of Claim 3, further comprising applying a constraint so the background intensities create a zero intercept of a linear regression of the equation:

$$(r_m - r_b) = m(g_m - g_b) + b$$

~~Equation 13~~

such that b is approximately zero, which occurs when

$$b = mg_b - r_b.$$

6. (original) The method of Claim 5, further comprising extracting the background subtraction constants.

7. (presently amended) A method of ~~selecting a~~ qualifying an individual microarray ~~scan for analysis~~ spot intensity ratio comprising:

determining a ratio coefficient of variation ~~for the microarray scan~~ of the spot;

comparing the ratio coefficient of variation to a predetermined threshold; and

qualifying the individual microarray spot intensity ratio responsive to the comparing ~~selecting a microarray scan if the coefficient of variation is lower than the predetermined threshold~~.

8. (presently amended) The method of Claim 7, further comprising determining the ratio coefficient of variation from the equation:

$$CV = \frac{R_{SD}}{R}$$

where $R_{SD} \approx \sqrt{g_{SD}^2 \frac{\bar{r}^2}{\bar{g}^4} + \frac{r_{SD}^2}{\bar{g}^2} - 2\sigma_{rg} \frac{\bar{r}}{\bar{g}^3}}$.

9. (presently amended) The method of Claim 7, further comprising determining a spot ratio coefficient of variation.

10. (presently amended) The method of Claim 7, further comprising determining an average ratio coefficient of variation of the spots within a microarray.

11. (presently amended) A method of extracting data from an image comprising:

determining a covariance and a variance ~~the of the image~~ of a microarray spot;

normalizing the covariance;

determining ~~the average~~ a mean and a standard deviation of the covariance; and

selecting the data based on the ~~average~~ mean and the standard deviation of the covariance.

12. (original) The method of Claim 11, further comprising calculating the covariance according to the following equation:

$$\sigma_{rg} = \frac{1}{n}\sum_{i=1}^{n}(r_i - \bar{r})(g_i - \bar{g}).$$

13. (original) The method of Claim 11, further comprising normalizing the covariance by adding the variances in quadrature according to the following equation:

$$\sigma'_{rg} = \frac{\sigma_{rg}}{\sqrt{\sigma_r^2 + \sigma_g^2}},$$

where σ'_{rg} is the normalized covariance, and σ'_r and σ'_g are the variances of the control and experimental channels.

14. (original) The method of Claim 11, further comprising normalizing the covariance by adding the variances according to the following equation:

$$\sigma'_{rg} = \frac{\sigma_{rg}}{\left[\frac{(\sigma_r + \sigma_g)}{2}\right]},$$

where σ'_{rg} is the normalized covariance, and σ_r, and σ_g are the variances of the control and experimental channels.

15. (original) The method of Claim 11, further comprising normalizing the covariance by using a control channel variance according to the following equation:

$$\sigma'_{rg} = \frac{\sigma_{rg}}{\sigma_g},$$

where σ'_{rg} is the normalized covariance, and σ_r, and σ_g are the variances of the control and experimental channels.

16. (original) The method of Claim 11, further comprising normalizing the covariance by using an experimental channel variance according to the following equation

$$\sigma'_{rg} = \frac{\sigma_{rg}}{\sigma_r},$$

where σ'_{rg} is the normalized covariance, and σ_r, and σ_g are the variances of the control and experimental channels.

17. (presently amended) A method of ~~extracting data from an image~~ qualifying microarrays comprising:

determining a covariance and a variance ~~the of the image~~ of each microarray spot;

determining ~~the slope of the covariance plotted against the variance~~ a slope of a linear regression between the covariance and the variance of all the spots within the microarray;

selecting outlying spots from a plot of the covariance versus the variance; and

selecting ~~the data where the slope exceeds a predetermined threshold~~ microarrays based on the slope and a regression coefficient of the linear regression.

18. (presently amended) The method of Claim 17, further comprising plotting each covariance value versus ~~the average~~ each variance ~~values~~ value.

19. (original) The method of Claim 17, further comprising ignoring data points not along the slope of the covariance plotted against the variance.

20. (original) The method of Claim 17, further comprising performing linear regression of the covariance plotted against the variance to create a distribution of data points.

21. (original) The method of Claim 20, further comprising selecting an image having a tight distribution of data points.